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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/446,144	03/02/2000	CARLO RUBBIA	P5634	1854

7590 04/17/2002

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EXAMINER

KEITH, JACK W

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 04/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<h2 style="margin: 0;">Office Action Summary</h2>	Application No. 09/446,144	Applicant(s) Rubbia	
	Examiner Jack Keith	Art Unit 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)  Responsive to communication(s) filed on Jan 25, 2002

2a)  This action is FINAL.      2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle* 35 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

4)  Claim(s) 1-48 is/are pending in the application

4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) \_\_\_\_\_ is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claims 1-48 are subject to restriction and/or election requirement.

**Application Papers**

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved.

12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)  All b)  Some\* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

15) <input type="checkbox"/> Notice of References Cited (PTO-892)	18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
17) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____	20) <input type="checkbox"/> Other: _____

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## **DETAILED ACTION**

### ***Election/Restriction***

1. Applicant's election with traverse of I, A, e, and BB in Paper No. 9 is acknowledged.

Based on a review of the disclosure a further lack of unity is warranted. The lack of unity of Paper no. 7 is withdrawn. Any inconvenience to applicant is regrettable. Before proceeding with the new lack of unity the examiner would like to address applicant's traversal of the first lack of unity.

The applicant traversed the lack of unity of Paper no. 7 citing that instead an election of species requirement would be proper.

Note Annex B when an independent claim does not avoid the prior art (e.g., US 5,160,696) as in applicants' case then the question whether there is still an inventive link between all the claims dependent on that claim is carefully considered. As there is no link remaining, an objection to lack of unity *a posteriori* of the genus/species is Proper.

Applicant's argument that new election of species requirement should be issued is noted; however, the lack of unity was Proper as set forth in Paper no. 7. Furthermore, lack of unity practice is based on US practice; therefore, the restriction/election would be similar in nature, if not the same.

Applicant further traversed the lack of unity based on the International Preliminary Examination Report being favorable to the claimed subject matter. Although the International

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Preliminary Examination Report is considered, the merits of the claimed subject matter will be determined under US examination.

Applicant additionally argues that none of the groups of claims are restricted to one embodiment (e.g. diffusion medium lead only or the moderator as carbon). It is noted that applicant can claim his invention as broadly as desired; however, the materials in question although not present in the generic claim(s) are those specified by applicant within the confines of the disclosure.

Applicant's argument that an additional species of moderator not presented by the examiner is present (i.e., moderator present but no specific material). As above applicant only lists carbon, deuterated water or no moderator present within the confines of his disclosure. This argument is unconvincing.

Again as stated above the lack of unity requirement is proper; however, as stated above upon further review of applicant's disclosure a further lack of unity is warranted.

2. This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

- I. Embodiment of figure 7a.
- II. Embodiment of figure 7b.
- III. Embodiment of figures 14a and 14b.

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3. Upon election of Species I, II or III, the applicant is further required to elect one of the following disclosed species. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

7,23,4' (A) Embodiment wherein the diffusing medium is lead only.  
B. Embodiment wherein the diffusing medium is bismuth only.  
C. Embodiment wherein the diffusing medium is lead and bismuth.

4. Upon election of Species A, B or C, the applicant is further required to elect one of the following disclosed species. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

6,21,22 (a) Embodiment wherein the moderator is carbon.  
b. Embodiment wherein the moderator is deuterated water.  
c. Embodiment wherein the no moderator is present.

5. Upon election of Species I or II only, the applicant is further required to elect one of the following disclosed species. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

i. Embodiment wherein the neutron source is a lithium only target bombarded by a charged particle beam.

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ii. Embodiment wherein the neutron source is a beryllium only target bombarded by a charged particle beam.

iii. Embodiment wherein the neutron source is a lithium and beryllium target bombarded by a charged particle beam.

iv. Embodiment wherein the neutron source is a radioactive source such as Am-Be or Cf<sup>252</sup>.

12, 28 (v.) Embodiment wherein the neutron source is a lead only spallation target bombarded by a charged particle beam.

vi. Embodiment wherein the neutron source is a bismuth only spallation target bombarded by a charged particle beam.

vii. Embodiment wherein the neutron source is a lead and bismuth spallation target bombarded by a charged particle beam.

6. Upon election of one of species i through vii, the applicant is further required to elect one of the following disclosed species. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

AA. Embodiment wherein the exposed material is I<sup>127</sup>.

31, 32 (BB.) Embodiment wherein the exposed material is Mo<sup>98</sup>.

CC. Embodiment wherein the exposed material is Te<sup>130</sup>.

DD. Embodiment wherein the exposed material is Xe<sup>124</sup>.

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EE. Embodiment wherein the exposed material is Si<sup>30</sup>.

FF. Embodiment wherein the exposed material is Ge<sup>70</sup>.

7. Upon election of Species III only, the applicant is further required to elect one of the following disclosed species. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

viii. Embodiment wherein the neutron source is from the core of a critical fast breeder reactor.

ix. Embodiment wherein the neutron source is an energy amplifier core consisting of a lead only spallation target and nuclear fuel material only.

x. Embodiment wherein the neutron source is an energy amplifier core consisting of a bismuth only spallation target and nuclear fuel material only.

xi. Embodiment wherein the neutron source is an energy amplifier core consisting of a lead and bismuth spallation target and nuclear fuel material only.

xii. Embodiment wherein the neutron source is an energy amplifier core consisting of a lead only spallation target and nuclear fuel material further including actinides to be disposed.

xiii. Embodiment wherein the neutron source is an energy amplifier core consisting of a bismuth only spallation target and nuclear fuel material nuclear fuel material further including actinides to be disposed.

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xiv. Embodiment wherein the neutron source is an energy amplifier core consisting of a lead and bismuth spallation target and nuclear fuel material nuclear fuel material further including actinides to be disposed.

8. Upon election of one of species viii through xiv, the applicant is further required to elect one of the following disclosed species. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

GG. Embodiment wherein the transmuted material is  $Tc^{99}$ .

HH. Embodiment wherein the transmuted material is  $I^{129}$ .

JJ. Embodiment wherein the transmuted material is  $Zr^{93}$ .

KK. Embodiment wherein the transmuted material is  $Cs^{135}$ .

LL. Embodiment wherein the transmuted material is  $Sn^{126}$ .

MM. Embodiment wherein the transmuted material is  $Se^{79}$ .

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9. Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable (e.g., II, A, a, v and BB or III, A, c, ix and GG). The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

10. The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: In the present case, there is no common “special technical feature” because the general inventive concept as set forth in the claims does not define over the prior art (See search report PCT/EP97/03218 and US 5,160,696).

11. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Keith whose telephone number is (703) 306-5752. The examiner can normally be reached on Monday through Friday from 7:00 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

jwk

April 16, 2002

*Charles T. Jordan*  
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